D R A F T

16 June 1965

Projected Operational Use (Assumptions)

Probable use will be as an all-weather collection system to acquire intelligence information for crisis management.

Although camera systems would be the primary collection tools, it is essential that a back-up system be available for use during bad-weather and darkness. The specific requirement for using the radar system would probably be during suspected clandestine military build-up situations which would necessitate immediate and constant air surveillance for which the camera systems could not be used.

The most probable types of targets which would be indicators of military build-up are railyards, ports, airfields, missile sites, unusual construction activity, naval maneuvers and land force maneuvers.

Required R & D

If the above statements are correct and acceptable, it is absolutely necessary to have a prior information about the capabilities and the limitations of the radar system to acquire meaningful information on the status of those target types listed above. Although some knowledge is already available about this system's capabilities and limitations, it is very incomplete information. Therefore it is considered essential to continue research and development of this radar system - from both the collection aspects and the exploitation aspects.

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Exploitation Requirements

To optimize radar image interpretation, the following research is considered necessary:

1. Target Studies - (a) Determine the relative interpretability of the above-listed targets as a function of azimuth and elevation aspect angles; (b) The degree of change detection which can be accomplished on repeat coverage; (c) The effects of variations in Vegetation, shadow and precipitation in the targets' environment.

2. Radar Image Enhancement Studies

(a) Determine the optimum procedures and capabilities of the roll-film correlator and the detail re-correlator to enhance the interpretability of the target's image.

(b) Determine the optimum photo lab techniques for image enhancement.

3. Interpreters Handbook

Produce a handbook which explain the following:

(a) Components and characteristics of the radar system and the correlators.

(b) Examples of system imagery and optical photographs of the above targets showing variations in aspect angles, elevation angles and environment.

(c) Error and Distortion recognition.

(d) Mensuration procedures and limitations.

Additional System Requirements for Interpretation

1. Data Block on the film compatible with data blocks on other systems.